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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------|-------------|----------------------|-------------------------|------------------|
| 10/829,209 | 04/22/2004 | Chang Nam Kim | K-0632 | 5528 |
| 34610 | 7590 | 11/29/2006 | EXAMINER | |
| TADESSE, YEWEBDAR T | | | | |
| FLESHNER & KIM, LLP | | | ART UNIT | PAPER NUMBER |
| P.O. BOX 221200 | | | 1734 | |
| CHANTILLY, VA 20153 | | | DATE MAILED: 11/29/2006 | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/829,209 | KIM, CHANG NAM | |
| | Examiner | Art Unit | |
| | Yewebdar T. Tadesse | 1734 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,4,11 and 18-41 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1,4,11 and 18-41 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 22 April 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: ____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

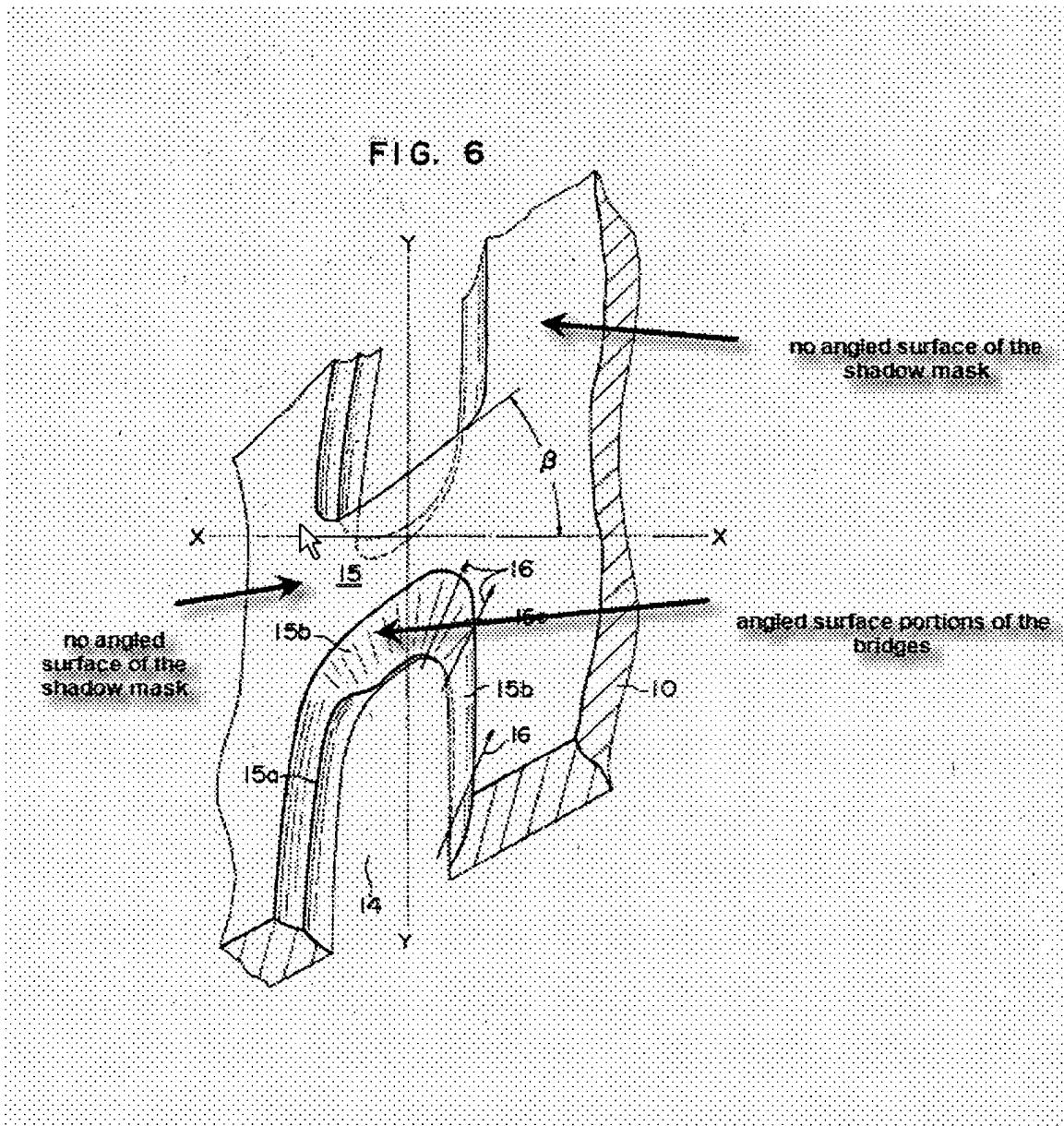
2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1,4, 11, 18-27 and 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (4,001,842) in view of Im et al (US 2002/0067117) and Yamauchi et al (US 4,168,450).

Suzuki et al discloses (see Abstract and Figs 1-2) a mask (25) for fabricating an organic electroluminescent device (screen), comprising: a plurality of striped slots or pattern holes aligned in uniformly running parallel to each other along x-axis and y-axis (apertures 31 having a pattern, see Figs 1-2) and a plurality of bridges (32) dividing the striped slots in pixel units (apertures 31 arranged in rows being separated with bridge) and each of the pattern holes has a shape and a size corresponding to a pixel region (color-emitting stripe 24) of the organic electroluminescent device, wherein each of the plurality of holes is configured to block or limit an adjacent sub-pixel area (see Fig 2 the apertures and bridges limiting the paths of the light of the adjacent pixel area) during deposition of an organic electro-luminescent material during fabrication of an organic

electroluminescent device. Suzuki et al lacks teaching striped slots or holes having a plurality of angled surfaces formed on each side of each upper and lower portion of each slot and wherein the upper and the lower inclined surface areas are different from each other with width or height and a plurality of bridges located between adjacent slots of the plurality of slots, wherein the bridge has angled surface portions formed on each inner side surface thereof and claimed thickness difference of the mask area. However, in the production of mask assembly it is well known to form slots having inclined surfaces formed on each side of slot or hole; for instance - Im et al discloses (see Fig 10A) a mask assembly having slots or holes having symmetric angled upper and lower surfaces (102a, 103b and 103a, 103b respectively) wherein the surface area of the upper angled surface is the same as the lower angled surface, (see Fig 10b) wherein the surface area of the first and the second upper angled surfaces is different from the surface area of the first and the second lower angled surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include slots having a plurality of angled surfaces with different width and height formed on each side of the upper and lower portion of each slot in Suzuki et al to prevent an electron beam from colliding with the strip of the slot as taught by Im et al. As to the bridge having angled surface portions and their thickness, Yamauchi et al discloses (see enclosed Fig 6) bridges between adjacent holes, angled surface formed along full inner perimeter surface (see angled surfaces 15a and 15b around the slot 14) and a thickness of the mask in areas corresponding to each of the plurality of bridges is less than a thickness of the mask in area of the mask having no angled surface portions (thickness of 15b is smaller than other no angled area of the mask). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a plurality of bridges having angled surface portion and a thickness as claimed in Suzuki et al to determine the incident angle of the electron beam impinging the bridge.



3. Claims 29-33 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable Suzuki et al (4,001,842) in view of Yamauchi et al (US 4,168,450) and Wolk et al (US 6,485,884).

Suzuki et al and Yamauchi et.al are cited for the same reasons describe above. Suzuki et al lacks teaching an alignment of a plurality of strip-type slots is different or same from an alignment of a second of the plurality of strip-type slots. Wolk et al discloses (see column 23-24, lines 53-67 and 1-6 respectively) mask slots (holes) having different or same alignment (different orientation). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include different or same alignment of a plurality of slot in Suzuki et al to form a wide variety of EL devices.

4. Claims 28,34 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (4,001,842) in view of Im et al (US 2002/0067117) or as applied to claim 1 or Suzuki et al (4,001,842) in view of Yamauchi et al (US 4,168,450) and Wolk et al (US 6,485,884) as applied to claim 29 above, and further in view of KR 2001 087952. Suzuki et al lacks shapes of strip-type slots of the type being oval, polygonal or circular. KR'952 discloses such shapes (see drawing). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include slots having oval, polygonal or circular shape as desired.

Response to Arguments

5. Applicant's arguments filed 09/14/2006 have been fully considered but they are not persuasive. As shown in the rejection above Suzuki et al discloses the limitation described in the amended claims 1, 11 and 29, a thickness of the mask in areas

corresponding the each of the plurality of bridges is less than a thickness of the mask in area of the mask having no angled surface portion.

In response to applicant's argument that Suzuki, Im and Yamauchi are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Suzuki discloses (see Abstract and Title of invention) a mask used in the fabrication of an electro-luminescent device. Im and Yamauchi also teach different types of shadow masks used in manufacturing EL devices. As such, Suzuki, Im and Yamauchi are pertinent to the use of mask in manufacturing an electroluminescent device. Applicant argues that in Suzuki the shadow mask is used in a CRT whereas in applicant's invention the shadow mask is used in an electroluminescent device. See Suzuki's title that the apparatus is used to manufacture electroluminescent device (screen). In any event, it is well known in the art to use a mask in fabrication of CRT or other electroluminescent devices.

As to the argument that Suzuki does not teach a thickness of the bridge portion less than a thickness of the other area of the shadow mask, Yamauchi discloses such feature as described above in the rejection.

Dependent claims are also rejectable over Suzuki, Im, Yamauchi and Wolk alone or in combination, for the same reasons set forth above.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yewebdar T. Tadesse whose telephone number is (571) 272-1238. The examiner can normally be reached on Monday-Friday 8:00 AM-4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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YTT